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DSSD CENSUS 2000 PROCEDURES AND OPERATIONS MEMORANDUM SERIES R- 15

MEMORANDUM FOR John Thompson
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Subject: Accuracy and Coverage Evaluation Survey: State Interview Sample
Size Estimates

I. INTRODUCTION

This memorandum documents how the Accuracy and Coverage Evaluation (A.C.E.) survey interview sample is expected to be distributed across the 50 states and the District of Columbia. A commitment to a state interview sample size is essential for the Field Division to accurately size staff, space, automation and communication systems, furniture and other equipment required for each of the 12 A.C.E. regional offices (ACEROs) and the Puerto Rico A.C.E. office. Furniture and computer equipment must be ordered now for delivery and installation from mid-summer through early fall of 1999. This is not a final A.C.E. design because the allocation of sample within the states has not yet been determined. Research continues on determining the within-state allocation. We are providing these state level estimates at this time for the planning purposes listed earlier. These numbers are consistent with the approximately 300,000 national housing unit interview sample planned for budgeting purposes in reference 1. These sample size estimates could change due to the budget process or operational resource constraints. These numbers assume that the A.C.E. sample design is contingent on the Integrated Coverage Measurement sample design.

The A.C.E. national sample consists of three components: 1) the general sample, 2) the American Indian Reservation (AIR) sample and 3) the small block cluster sample. The general sample allocation is proportional to total population with a minimum of 1800 housing units in each state and 3750 housing units in Hawaii. The AIR sample allocation is approximately proportional to

the 1990 American Indian population on reservations and is described in reference 2. The number of housing units to be interviewed from the small block sample is expected to be low nationally and, consequently, should not significantly impact state interviewing workloads. Therefore, estimates of the interview sample from small blocks are not included in this memorandum. For each state, estimates of the housing unit sample size in terms of interviewing are given for the general sample and AIR sample in Table 1 of the Attachments. The number of interviews is approximately 302,000 for the total U.S. which includes both occupied and vacant housing units.

For completeness, the Puerto Rico sample size is provided in Table 1 as well. The Puerto Rico interview sample size is approximately 15,000 housing units. This is consistent with reference 1.

II. GENERAL SAMPLE ALLOCATION

The general sample is allocated across states proportional to 1998 total population estimates¹ with a minimum of 1800 housing units in each state and 3750 housing units in Hawaii. This is not a final design of the A.C.E. general sample. The Decennial Statistical Studies Division (DSSD) still needs to determine how to allocate the sample within each state. We arrived at this allocation by simulating alternative sample designs and comparing simulated coefficients of variation (CVs) for the 1990 poststrata design. A future memorandum will fully document this research. Features of the allocation are the following:

1. Proportional to State Total Population: Allocating proportional to the state total population is conservative and flexible. A differential sampling plan can be developed in the future using 2000 poststrata information and the results of the A.C.E. initial block cluster listing sample.
2. Minimum of 1800 Housing Units per state: Allocating proportional to total population produced small sample sizes in some states. To address this concern, a number of state minima were examined. The choice of 1800 housing units balanced the gains and losses of the simulated CVs among the poststrata.
3. Sample Size in Hawaii: To support national estimates for Hawaiians and Pacific Islanders as a separate race group requires a larger sample size in Hawaii than 1800 housing units. Alternate sample sizes were examined. The improvement in simulated CVs started to diminish above 3750 housing units.

¹Ideally, we would have preferred to subtract the American Indian population living on American Indian Reservations from the 1998 state total population estimates to do the general sample allocation. The information to do this was not available. This results in Arizona probably getting a little more sample under this scenario.

III. ACERO SAMPLE SIZES

As noted, the DSSD has not determined how to allocate the sample within each state. There will probably be some differential sampling within California, New Jersey and New York, the three states split by two ACEROs. For the convenience of the Field Division, the DSSD has approximated what the ACERO sample sizes might be. In California, approximately 23,800 housing units (23,600 general sample and 200 AIR sample) will be in the Los Angeles ACERO while approximately 10,040 housing units (9,910 general sample and 130 AIR sample) will be in the Seattle ACERO. In New Jersey, approximately 5,500 housing units (no AIR sample) will be in the New York ACERO while approximately 2,840 housing units (no AIR sample) will be in the Philadelphia ACERO. In New York, approximately 4,910 housing units (4,760 general sample, 150 AIR sample) will be in the Boston ACERO while approximately 13,900 housing units (no AIR sample) will be in the New York ACERO. The ACERO estimates are in Table 2 of the Attachment. Again, these are estimates. Details of the within-state allocation have not been developed.

IV. REFERENCES

- 1 Memorandum for Hogan from Kostanich, "Accuracy and Coverage Evaluation Survey: Sample Size Estimates," April 30, 1999.
- 2 Memorandum for Hogan from Kostanich, "Accuracy and Coverage Evaluation Survey: American Indian Reservations Sample Design," April 30, 1999.

cc:

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Table 1. A.C.E. Interview Sample Allocation

State	Housing Units		
	General	AIR	Total
Alabama	4,470	0	4,470
Alaska	1,800	30	1,830
Arizona	4,800	3,390	8,190
Arkansas	2,610	0	2,610
California	33,510	330	33,840
Colorado	4,080	60	4,140
Connecticut	3,360	0	3,360
Delaware	1,800	0	1,800
District of Columbia	1,800	0	1,800
Florida	15,300	30	15,330
Georgia	7,830	0	7,830
Hawaii	3,750	0	3,750
Idaho	1,800	180	1,980
Illinois	12,360	0	12,360
Indiana	6,060	0	6,060
Iowa	2,940	0	2,940
Kansas	2,700	30	2,730
Kentucky	4,050	0	4,050
Louisiana	4,470	0	4,470
Maine	1,800	30	1,830
Maryland	5,280	0	5,280
Massachusetts	6,300	0	6,300
Michigan	10,080	150	10,230
Minnesota	4,860	300	5,160
Mississippi	2,820	90	2,910
Missouri	5,580	0	5,580
Montana	1,800	720	2,520
Nebraska	1,800	90	1,890
Nevada	1,800	150	1,950
New Hampshire	1,800	0	1,800
New Jersey	8,340	0	8,340
New Mexico	1,800	2,100	3,900
New York	18,660	150	18,810
North Carolina	7,740	120	7,860
North Dakota	1,800	360	2,160
Ohio	11,490	0	11,490
Oklahoma	3,420	240	3,660
Oregon	3,360	90	3,450
Pennsylvania	12,300	0	12,300
Rhode Island	1,800	0	1,800
South Carolina	3,930	0	3,930
South Dakota	1,800	810	2,610
Tennessee	5,580	0	5,580
Texas	20,280	30	20,310
Utah	2,160	210	2,370
Vermont	1,800	0	1,800
Virginia	6,960	0	6,960
Washington	5,850	510	6,360
West Virginia	1,860	0	1,860
Wisconsin	5,370	300	5,670
Wyoming	1,800	150	1,950
U.S. Total	291,510	10,650	302,160
Puerto Rico	15,000	0	15,000

Table 2. A.C.E. Regional Office Interview Estimates

ACERO Code	A.C.E. Regional Office	Housing Units		
		General	AIR	Total
21	Boston	21,620	180	21,800
22	New York	19,400	0	19,400
23	Philadelphia	24,020	0	24,020
24	Detroit	23,430	150	23,580
25	Chicago	23,790	300	24,090
26	Kansas City	22,110	570	22,680
27	Seattle	22,720	940	23,660
28	Charlotte	28,260	120	28,380
29	Atlanta	27,600	30	27,630
30	Dallas	27,570	120	27,690
31	Denver	23,640	8,040	31,680
32	Los Angeles	27,350	200	27,550
	U.S. Total	291,510	10,650	302,160
	Puerto Rico	15,000	0	15,000